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WHITE SANDS MISSILE RANGE CLIMATE CALENDAR, (U)  
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WHITE SANDS MISSILE RANGE  
CLIMATE CALENDAR  
BY  
10 DAVID J. NOVLAN

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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is the seventh edition of the White Sands Missile Range Climate Calendar, which was first published in May 1963. → Mean daily maximum and minimum temperatures, and extreme temperatures for the period of record (1950-1976) are tabulated in calendar form for Station, the forecast center located at Headquarters, White Sands Missile		

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20. ABSTRACT (Cont.)

*cont.* → Range, New Mexico. Averages of temperatures, relative humidity, wind and cloudiness are included for each month, as well as maximum 24-hour and monthly rainfall.

→ Supplementary tables give monthly, seasonal and annual values of maximum winds, degree days, solar radiation, means and extremes of station pressure, the greatest monthly and single-storm snowfall, and the average six-hourly relative humidities. Also included are the average number of days with the occurrence of precipitation, distant lightning, thunderstorms, and visibility restrictions.



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## FOREWORD

This report is a revision of Data Report 876, published under the same title in Jan 1975. The revision updates the original data to cover the period through September 1977.

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## INTRODUCTION

The weather site designated as "A" Station is in the Headquarters area of White Sands Missile Range (WSMR). Its geographic coordinates are 32° 22.7' North and 106° 28.8' West (Fig. 1). The elevation of the Station Barometer is 4,238.4 feet above sea level. The climatological data in this report are for a period of 25 years, 1950 through 1974, unless otherwise indicated. (Daily temperature means and extremes only have been computed through December 1974.) The station was initially operated by the Air Force, but since April 1961 it has been manned by U. S. Army personnel.

Temperature, wind, precipitation and relative humidity are measured with instruments mounted on the roof of the weather station building, No. 1510. (The elevation of the floor of the instrument shelter is 4,252 feet.) However, since May 1955 wind measurements have been made by an Aerovane mounted on a 13-foot mast 0.5 miles west--279°--from the station, (elevation of Aerovane, 4,304.05 feet) with indicators and recorders for wind speed and direction installed in the weather station building.

Temperature extremes are the highest (maximum) and the lowest (minimum) temperatures which have occurred for each day of the year for the period of record. Temperatures are given in degrees Fahrenheit, wind speeds are in knots, and rainfall and snowfall are reported in inches.

The data in this report are considered to be representative of the Headquarters area. However, due to the great extent and extreme variations in elevation and topography of WSMR (4,000 square miles, from dry lake beds--"playas"--at 3,900 feet to mountain peaks near 9,000 feet, Fig. 1 and 2) conditions in other parts of the range may vary widely. For example, the record low temperature for this station is 6° below zero, while at White Sands National Monument it is 25° below zero, and both of these records occurred on the same date--11 January 1962. Also, severe local thunderstorms may produce torrential rainfall in a comparatively small area with little or no rainfall a few miles distant. On 4 July 1961, 1.80" of rain fell in 48 minutes at "A" Station and the 24-hour total was 2.31", while at Orogrande, 24 miles east, the total rainfall for that day was only 0.02".

The greatest 24-hour rainfall of record on the Range occurred at White Sands National Monument on 21-22 September 1941, with a fall of 5.30". Of this amount, 4.28" fell in five hours--1430-1930 MST, 21 September. This, however, was a general storm, with rainfall totals at a few other stations on or near WSMR as follows: Alamogordo, 2.60"; El Paso Airport, 3.42"; Las Cruces, 4.61"; Orogrande, 3.27", Tularosa, 4.75". The greatest 24-hour rainfall of record at "A" Station is 4.25", which fell on 23-24 August 1959. (See Table III.)



## DISCUSSION

### COLD SEASON (NOVEMBER-APRIL) WEATHER

December and January are the coldest months, with nearly identical mean temperatures. (See Table I.) February averages nearly 4° warmer, but it has the same low temperature record as December. The record low temperature, (-6°) occurred on 11 January 1962, when absolute record minima were established at most stations in southern New Mexico, during an extremely severe cold spell.

The average number of days with minimum temperatures at or below freezing is 38, and with 20° or less is only three. The earliest date of the last freezing temperature in spring occurred on 14 February 1950 (see Table V), while the earliest date of a 90° temperature was 14 April 1963. The record high temperature for the cold season, 94°, was recorded on 22 April 1965. Average date of the first fall freeze is 20 November.

Only 30% of the annual rainfall occurs during the cold season, and April (the second driest month) and November (the third driest) altogether account for only 7% of the annual total. This 6-month period averages only three days with the occurrence of thunderstorms out of the annual total of 43 days. The three coldest months receive 77% of the annual snowfall total of 6.0 inches.

April, the windiest month of the year, has an average hourly wind speed of 8.7 knots. Visibility is reduced to 6 miles or less (by fog, snow, blowing dust, etc.) on an average of 21 days during this season. Five of these days occur in March and four in April, while the total for the year is 36 days. (See Table IV).

#### WARM SEASON (MAY-OCTOBER) WEATHER

Although June and July are the warmest months, August is only slightly cooler (see Table II). The average number of days with a temperature of 100° or more is only 7, three each in June and July, and one in August. Only in occasional years do such high temperatures occur in May, and none have been recorded in September at this station. The greatest number of successive days with 100° or more is 8, from 26 June to 3 July 1960. However, 18 successive days with 99° or more occurred from 24 June to 11 July 1951. It was during these two periods that the temperature of 106° occurred four times. The absolute high temperature was 107° on 31 July 1972.

Maximum temperatures at Desert Station (near Army Block House) average about 1.2° higher than at "A" Station during the summer months, so that 100° temperatures can be expected in that area on an average of about 12 days each summer. At Orogrande, about 24 miles east of WSMR Headquarters, summer temperatures average about four degrees higher than at this station, and the absolute record high temperature for Orogrande, 116°, equals the record high temperature for the entire state of New Mexico.

The lowest maximum temperature of occurrence for any year was in 1959, when 99° was recorded only twice. The average number of days with maximum temperature of 90° or more is 84, sixty-seven of which occur during the three warmest months. The earliest date of 95° reading was 11 May 1962, and the average date is 2 June. The latest occurrence of 95° in late summer was on 27 September 1951, and the average date is 4 September, while there are thirty-six days per year when a maximum of 95° or more is recorded. October mean temperatures are within one degree of the annual mean.

May (the driest month) and June are, on the average, quite dry. Collectively, they contribute only 11% of the total annual rainfall. July, August, and September, the wettest months of the year, account for 50% of the average annual rainfall of 10.68", and for 66% of the thunderstorms. Seventy per cent of the annual rainfall occurs during the warm season and all but three of the 43 days with thunderstorms. The greatest monthly rainfall of record at this station, 7.42", occurred in June 1966. The driest year of record was 1956, with a rainfall total of only 3.92", (see Table III).

August, with an average hourly wind speed of 4.7 knots is the least windy month of the year, while the annual average is 6.1 knots. The prevailing wind direction for 11 of the 12 months is west, but for July it is southeast. Visibility of 6 miles or less occurs on 15 days during the warm season.

COLDEST PERIODS	TEMPERATURES (°F)				
	MEAN MAX	MEAN MIN	MEAN	HIGHEST	LOWEST
MONTH OF DECEMBER	56.0	34.7	45.4	77	8
MONTH OF JANUARY	56.3	34.6	45.5	73	-6
MONTH OF FEBRUARY	60.0	37.6	48.8	81	8

TABLE I. TEMPERATURES DURING COLDEST MONTHS, "A" STATION

WARMEST PERIODS	TEMPERATURES (°F)				
	MEAN MAX	MEAN MIN	MEAN	HIGHEST	LOWEST
MONTH OF JUNE	92.8	69.0	80.9	106	50
MONTH OF JULY	93.3	70.5	81.9	107	59
MONTH OF AUGUST	91.1	68.8	80.0	103	55

TABLE II. TEMPERATURES DURING WARMEST MONTHS, "A" STATION

The following tabulations show the precipitation extremes (greatest and least) of record for White Sands Missile Range and vicinity:

PRECIPITATION EXTREMES, "A" STATION, WHITE SANDS MISSILE RANGE		
0.38 inch	8 minutes	1412-1420MST, 27 July 1965
1.80 inch	48 minutes	1530-1618MST, 4 July 1961
2.92 inches	2 1/2 hours	0050-0320MST, 24 August, 1959
3.17 inches	6 hours	2245-0445MST, 23-24 August, 1959
3.72 inches	12 hours	1645-0445MST, 23-24 August, 1959
4.25 inches	24 hours	2210-1925MST, 23-24 August, 1959
Greatest annual rainfall:		20.02 inches in 1958.
Least annual rainfall:		3.92 inches in 1956.
Longest dry spell		
(no measureable rainfall):		123 days, 2/10-6/11, 1956.
Second longest dry spell:		80 days, 10/8-12/26, 1954.
Greatest seasonal snowfall:		24.5 inches, 1967-1968.
Greatest annual snowfall:		18.5 inches, 1960.
HEAVIEST RAINFALL OF RECORD, WHITE SANDS NATIONAL MONUMENT [3]		
0.95 inch	30 minutes	4.28 inches 5 hours
1.50 inch	1 hour	4.40 inches 6 hours
2.50 inches	2 hours	5.17 inches 12 hours
3.50 inches	3 hours	5.30 inches 24 hours, 9/21-22/41
PRECIPITATION EXTREMES, NEW MEXICO STATE UNIVERSITY, LAS CRUCES [8]		
Extremely heavy rainfall occurred at the University station from 11:05pm 29 Aug. to 7:00am 30 Aug., 1935, measured as follows:		
0.64 inch	5 minutes	2.77 inches 60 minutes
1.06 inch	10 minutes	4.15 inches 2 hours
1.50 inch	15 minutes	4.77 inches 3 hours
1.86 inch	20 minutes	5.91 inches 4 hours
2.48 inches	30 minutes	6.46 inches 7 hours 55 minutes
Greatest 24-hour rainfall:		6.49 inches, 29-30 August, 1935
Greatest monthly rainfall:		7.53 inches, September, 1941
WETTEST AND DRIEST YEARS, NEW MEXICO STATE UNIVERSITY		
15.05 inches in 1881, La Mesilla	13.26 inches in 1931, NMSU	
17.09 inches in 1905, NMSU	19.60 inches in 1941, NMSU	
14.35 inches in 1926, NMSU	14.01 inches in 1958, NMSU	
3.61 inches in 1860, Ft. Fillmore	4.02 inches in 1910, NMSU	
3.49 inches in 1873, Ft. Selden	3.81 inches in 1953, NMSU	
4.47 inches in 1892, NMSU	3.62 inches in 1964, NMSU	
HEAVIEST SNOWFALL OF RECORD, NEW MEXICO STATE UNIVERSITY		
Greatest Monthly		Greatest 24-hours
January	4.7 inches in 1947	4.7 inches in 1947
February	10.4 inches in 1956	9.0 inches in 1956
March	2.7 inches in 1944	2.7 inches in 1944
November	5.0 inches in 1957	5.0 inches in 1957
December	10.3 inches in 1931	9.0 inches in 1931

TABLE III. PRECIPITATION EXTREMES, WSMR AND VICINITY



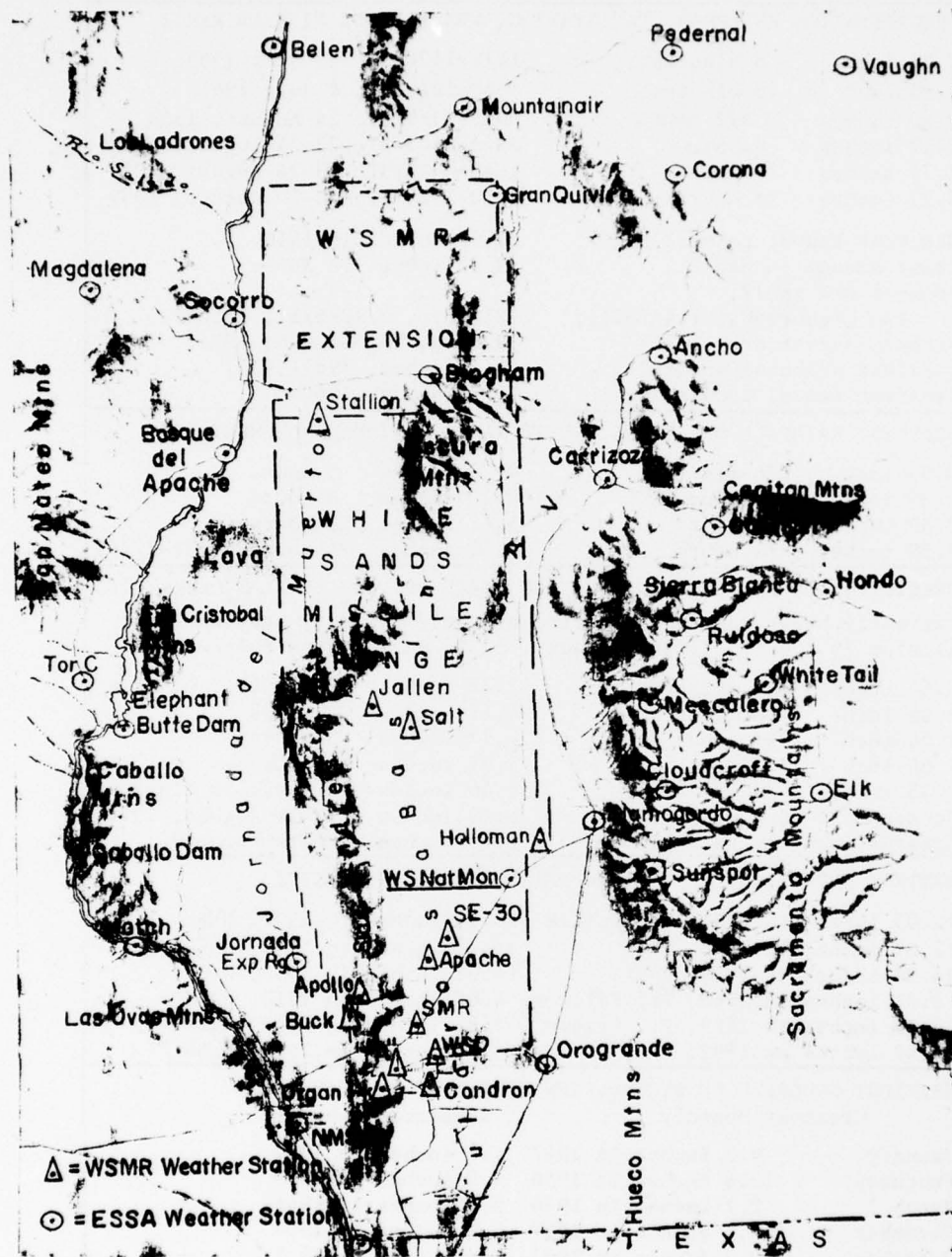


FIGURE 1. WEATHER STATIONS, WHITE SANDS MISSILE RANGE AND VICINITY

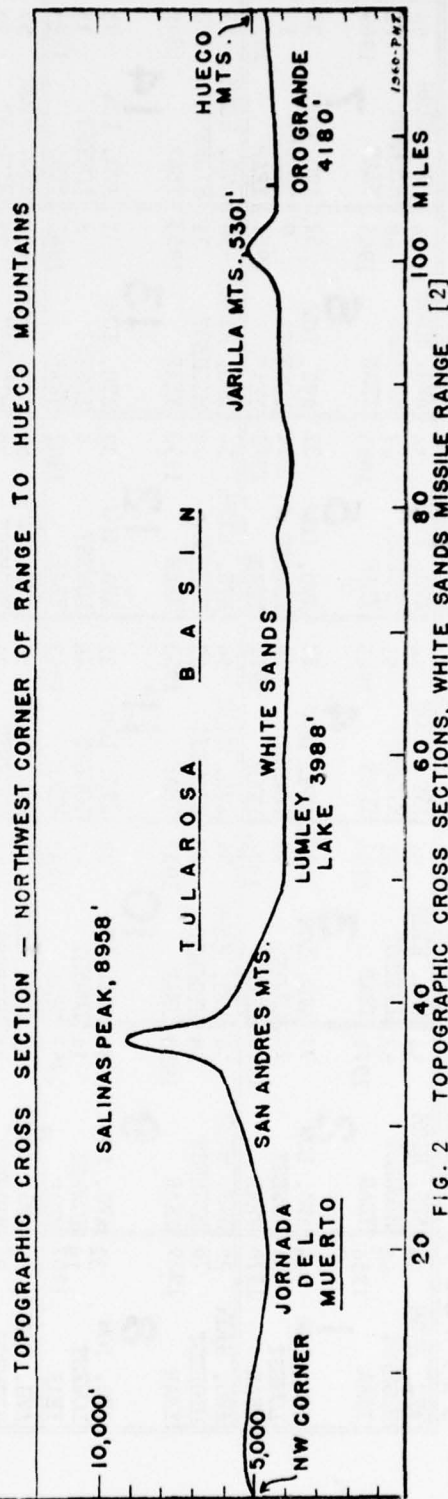
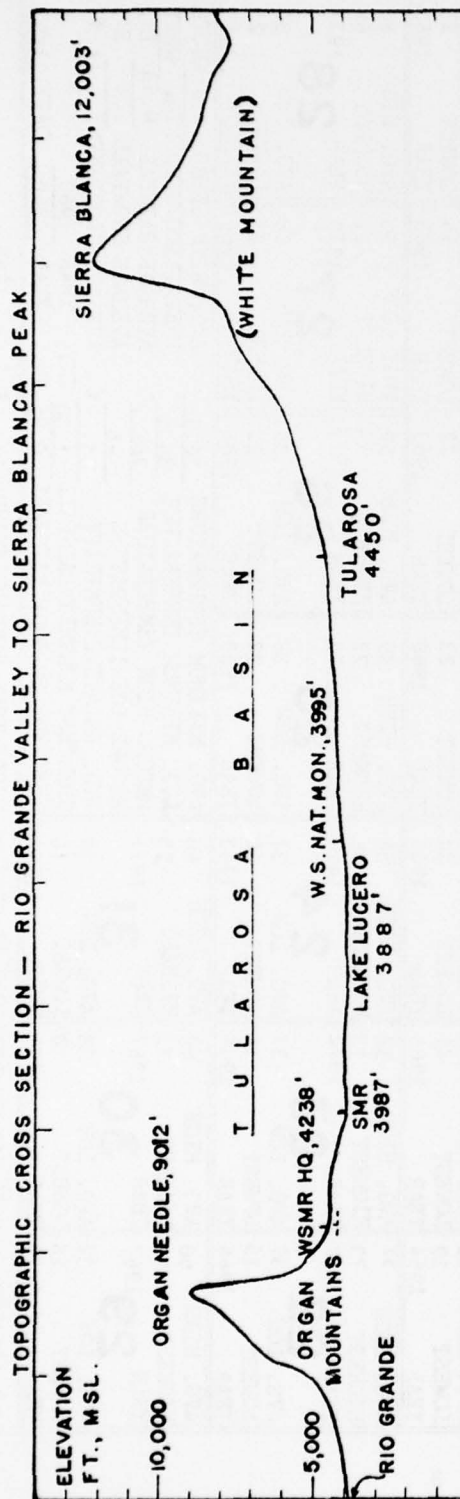


FIG. 2 TOPOGRAPHIC CROSS SECTIONS, WHITE SANDS MISSILE RANGE [2]

## 1A" STATION, WHITE SANDS MISSILE RANGE

\* ABSOLUTE RECORD LOW TEMPERATURE AT STATION. GREATEST JANUARY SNOWFALL: 5.5 in. 1968



## DAILY TEMPERATURE RANGE AND FREQUENCY OF OCCURRENCE OF TEMPERATURES IN THE TROPICAL OCEAN.

**\*\* 14th: EARLIEST DATE OF LAST FREEZING TEMPERATURE IN SPRING, 1950**

HIGHEST WIND 102 KNOTS 22 FEB 1977

CUMULATIVE PRECIP. END OF FEB 1.06 IN



"A" STATION, WHITE SANDS MISSILE RANGE  
DAILY TEMPERATURE MEANS AND EXTREMES, WITH YEAR OF OCCURRENCE  
MONTHLY SUMMARY OF AVERAGE CLIMATOLOGICAL DATA, WITH RAINFALL EXTREMES

M A R C H				M A R C H				M A R C H				M A R C H			
AVG. HIGH	62	AVG. HIGH	62	AVG. HIGH	62	AVG. HIGH	62	AVG. HIGH	62	AVG. HIGH	62	AVG. HIGH	62	AVG. HIGH	62
HIGHEST	78	HIGHEST	78	HIGHEST	78	HIGHEST	78	HIGHEST	78	HIGHEST	78	HIGHEST	78	HIGHEST	78
YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974
AVG. LOW	40	AVG. LOW	40	AVG. LOW	40	AVG. LOW	40	AVG. LOW	40	AVG. LOW	40	AVG. LOW	40	AVG. LOW	40
LOWEST	27	LOWEST	24	LOWEST	22	LOWEST	22	LOWEST	22	LOWEST	22	LOWEST	22	LOWEST	22
YEAR	1960	YEAR	1965	YEAR	1971	YEAR	1965	YEAR	1966	YEAR	1966	YEAR	1977	YEAR	1971
AVG. HIGH	63	AVG. HIGH	63	AVG. HIGH	63	AVG. HIGH	63	AVG. HIGH	63	AVG. HIGH	63	AVG. HIGH	63	AVG. HIGH	63
HIGHEST	81	HIGHEST	78	HIGHEST	79	HIGHEST	79	HIGHEST	79	HIGHEST	79	HIGHEST	81	HIGHEST	81
YEAR	1960	YEAR	1960	YEAR	1972	YEAR	1972	YEAR	1972	YEAR	1972	YEAR	1972	YEAR	1972
AVG. LOW	41	AVG. LOW	41	AVG. LOW	41	AVG. LOW	41	AVG. LOW	41	AVG. LOW	41	AVG. LOW	41	AVG. LOW	41
LOWEST	28	LOWEST	30	LOWEST	30	LOWEST	30	LOWEST	30	LOWEST	30	LOWEST	25	LOWEST	29
YEAR	1956	YEAR	1964	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1977	YEAR	1971
AVG. HIGH	65	AVG. HIGH	65	AVG. HIGH	66	AVG. HIGH	66	AVG. HIGH	66	AVG. HIGH	66	AVG. HIGH	64	AVG. HIGH	65
HIGHEST	80	HIGHEST	80	HIGHEST	83	HIGHEST	83	HIGHEST	83	HIGHEST	83	HIGHEST	84	HIGHEST	82
YEAR	1966	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1974	YEAR	1972	YEAR	1972
AVG. LOW	42	AVG. LOW	43	AVG. LOW	43	AVG. LOW	43	AVG. LOW	43	AVG. LOW	43	AVG. LOW	42	AVG. LOW	42
LOWEST	21	LOWEST	27	LOWEST	27	LOWEST	27	LOWEST	27	LOWEST	27	LOWEST	27	LOWEST	28
YEAR	1962	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1958	YEAR	1962
AVG. HIGH	68	AVG. HIGH	68	AVG. HIGH	69	AVG. HIGH	69	AVG. HIGH	69	AVG. HIGH	69	AVG. HIGH	67	AVG. HIGH	67
HIGHEST	80	HIGHEST	84	HIGHEST	80	HIGHEST	81	HIGHEST	81	HIGHEST	81	HIGHEST	77	HIGHEST	77
YEAR	1972	YEAR	1971	YEAR	1950	YEAR	1953	YEAR	1953	YEAR	1953	YEAR	1966	YEAR	1960
AVG. LOW	45	AVG. LOW	45	AVG. LOW	46	AVG. LOW	46	AVG. LOW	46	AVG. LOW	46	AVG. LOW	44	AVG. LOW	44
LOWEST	26	LOWEST	28	LOWEST	37	LOWEST	32	LOWEST	32	LOWEST	32	LOWEST	23	LOWEST	29
YEAR	1952	YEAR	1952	YEAR	1966	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1955	YEAR	1955
AVG. HIGH	71	AVG. HIGH	72	AVG. HIGH	72	AVG. HIGH	72	AVG. HIGH	72	AVG. HIGH	72	AVG. HIGH	70	AVG. HIGH	71
HIGHEST	80	HIGHEST	82	HIGHEST	84	HIGHEST	84	HIGHEST	84	HIGHEST	84	HIGHEST	85	HIGHEST	86
YEAR	1967	YEAR	1974	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1969	YEAR	1971	YEAR	1967
AVG. LOW	48	AVG. LOW	49	AVG. LOW	49	AVG. LOW	49	AVG. LOW	49	AVG. LOW	49	AVG. LOW	47	AVG. LOW	48
LOWEST	31	LOWEST	29	LOWEST	33	LOWEST	33	LOWEST	33	LOWEST	33	LOWEST	23	LOWEST	28
YEAR	1975	YEAR	1975	YEAR	1976	YEAR	1976	YEAR	1976	YEAR	1976	YEAR	1955	YEAR	1955
** AVERAGE DATE OF LAST FREEZING TEMPERATURE IN SPRING. CUMULATIVE PRECIP END OF MARCH 1.55 IN															

APRIL

**\*\* EARLIEST DATE TEMPERATURE REACHED 90°. \*\*\* LATEST DATE FREEZING TEMPERATURE IN SPRING**

CUMULATIVE PRECIP THROUGH APRIL 1.80 IN

"A" STATION, WHITE SANDS MISSILE RANGE

## DAILY TEMPERATURE MEANS AND EXTREMES, WITH YEAR OF OCCURRENCE

# MONTHLY SUMMARY OF AVERAGE CLIMATOLOGICAL DATA, WITH RAINFALL EXTREMES

[illegible]

\*\* EARLIEST DATE OF 100° TEMPERATURE AT STATION

CUMULATIVE PRECIP THROUGH MAY 2.05 IN



## JUNNE

CUMULATIVE PRECIP END OF JUNE 2.89 IN



4" STATION. WHITE SANDS MISSILE RANGE

4" STATION. WHITE SANDS MISSILE RANGE

DAILY TEMPERATURE MEANS AND EXTREMES, WITH YEAR OF OCCURRENCE

JULY

JULY

MONTH:

## SUMMARY

FRANCE

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DATA W

## GRAFTING

FOR  
TUBES

JULY

[illegible]

Ø Ø ABSOLUTE RECORD MAXIMUM TEMPERATURE AT STATION:

CUMULATIVE PRECIP THROUGH JULY 5.11 IN

## AUGUST

100 LATEST DATE OF 100° TEMPERATURE AT STATION. 1952.

1111





"A" STATION, WHITE SANDS MISSILE RANGE

LATEST DATE OF 90° TEMPERATURE AT STATION, 1965.

CUMULATIVE PRECIP THROUGH OCTOBER 9.59 IN  
GREATEST & EARLIEST OCTOBER SNOWFALL 0.6 IN 28 OCT 1976

DAILY TEMPERATURE MEANS AND EXTREMES, WITH YEAR OF OCCURRENCE

DAILY TEMPERATURE MEANS AND EXTREMES, WITH YEAR OF OCCURRENCE  
AND SUMMARY OF AVERAGE CLIMATOLOGICAL DATA WITH RAINFALL EXTREMES

NOVEMBER

AVG. HIGH HIGHEST YEAR	69 84 1950	AVG. HIGH HIGHEST YEAR	69 77 1952	AVG. HIGH HIGHEST YEAR	68 76 1975	AVG. HIGH HIGHEST YEAR	68 78 1975	AVG. HIGH HIGHEST YEAR	67 79 1975	AVG. HIGH HIGHEST YEAR	67 81 1973	AVG. HIGH HIGHEST YEAR	66 83 1950
AVG. LOW LOWEST YEAR	46 38 1974	AVG. LOW LOWEST YEAR	46 33 1966	AVG. LOW LOWEST YEAR	45 33 1969	AVG. LOW LOWEST YEAR	45 32 1967	AVG. LOW LOWEST YEAR	44 34 1970	AVG. LOW LOWEST YEAR	44 29 1959	AVG. LOW LOWEST YEAR	43 29 1959
AVG. HIGH HIGHEST YEAR	66 82 1973	AVG. HIGH HIGHEST YEAR	66 81 1973	AVG. HIGH HIGHEST YEAR	65 76 1969	AVG. HIGH HIGHEST YEAR	65 78 1973	AVG. HIGH HIGHEST YEAR	65 84 1973	AVG. HIGH HIGHEST YEAR	65 79 1973	AVG. HIGH HIGHEST YEAR	64 77 1962
AVG. LOW LOWEST YEAR	43 33 1955	AVG. LOW LOWEST YEAR	43 28 1955	AVG. LOW LOWEST YEAR	42 25 1950	AVG. LOW LOWEST YEAR	42 22 1950	AVG. LOW LOWEST YEAR	42 23 1976	AVG. LOW LOWEST YEAR	42 18 1976	AVG. LOW LOWEST YEAR	42 12 1976
AVG. HIGH HIGHEST YEAR	64 77 1966	AVG. HIGH HIGHEST YEAR	64 80 1966	AVG. HIGH HIGHEST YEAR	64 81 1966	AVG. HIGH HIGHEST YEAR	64 77 1966	AVG. HIGH HIGHEST YEAR	63 74 1965	AVG. HIGH HIGHEST YEAR	63 73 1966	AVG. HIGH HIGHEST YEAR	63 73 1955
AVG. LOW LOWEST YEAR	42 25 1976	AVG. LOW LOWEST YEAR	41 23 1976	AVG. LOW LOWEST YEAR	41 28 1959	AVG. LOW LOWEST YEAR	41 26 1958	AVG. LOW LOWEST YEAR	40 25 1969	AVG. LOW LOWEST YEAR	40 26 1969	AVG. LOW LOWEST YEAR	40 25 1956
AVG. HIGH HIGHEST YEAR	62 74 1950	AVG. HIGH HIGHEST YEAR	62 75 1965	AVG. HIGH HIGHEST YEAR	62 73 1965	AVG. HIGH HIGHEST YEAR	61 75 1965	AVG. HIGH HIGHEST YEAR	61 75 1960	AVG. HIGH HIGHEST YEAR	61 72 1950	AVG. HIGH HIGHEST YEAR	60 73 1970
AVG. LOW LOWEST YEAR	40 25 1964	AVG. LOW LOWEST YEAR	39 30 1964	AVG. LOW LOWEST YEAR	39 28 1970	AVG. LOW LOWEST YEAR	39 30 1956	AVG. LOW LOWEST YEAR	39 25 1952	AVG. LOW LOWEST YEAR	38 15 1976	AVG. LOW LOWEST YEAR	38 10 1976
AVG. HIGH HIGHEST YEAR	60 74 1970	AVG. HIGH HIGHEST YEAR	60 72 1950	AVG. HIGH HIGHEST YEAR	60 72 1950	AVG. HIGH HIGHEST YEAR	60 72 1950	AVG. HIGH HIGHEST YEAR	60 72 1950	AVG. HIGH HIGHEST YEAR	60 72 1950	AVG. HIGH HIGHEST YEAR	60 73 1970
AVG. LOW LOWEST YEAR	38 5 1976	AVG. LOW LOWEST YEAR	38 15 1976	AVG. LOW LOWEST YEAR	38 15 1976	AVG. LOW LOWEST YEAR	38 15 1976	AVG. LOW LOWEST YEAR	38 15 1976	AVG. LOW LOWEST YEAR	38 15 1976	AVG. LOW LOWEST YEAR	38 10 1976
AVERAGE MAXIMUM TEMPERATURE 64.0° AVERAGE MINIMUM TEMPERATURE 41.3° RECORD MAXIMUM TEMPERATURE 84° RECORD MINIMUM TEMPERATURE 22° AVERAGE RELATIVE HUMIDITY 43% GREATEST MONTHLY RAINFALL 2.40 IN., YEAR 1961 GREATEST 24-HOUR RAINFALL 0.89 IN., YEAR 1961, DATE 8th													

\*\*\* EARLIEST DATE OF FIRST FREEZING TEMPERATURE, 1967. \*\* AVERAGE DATE OF FIRST FREEZING TEMPERATURE.

CUMULATIVE PRECIP THROUGH NOVEMBER 10.03 IN

GREATEST NOV SNOWFALL 10.6 IN 1976

"A" STATION, WHITE SANDS MISSILE RANGE  
DAILY TEMPERATURE MEANS AND EXTREMES, WITH YEAR OF OCCURRENCE  
D E C E M B E R MONTHLY SUMMARY OF AVERAGE CLIMATOLOGICAL DATA, WITH RAINFALL EXTREMES D E C E M B E R

AVG. HIGH HIGHEST YEAR	59 73 1961	AVG. HIGH HIGHEST YEAR	59 71 1954	AVG. HIGH HIGHEST YEAR	58 77 1958	AVG. HIGH HIGHEST YEAR	58 73 1958	AVG. HIGH HIGHEST YEAR	58 68 1966	AVG. HIGH HIGHEST YEAR	57 70 1954
AVG. LOW LOWEST YEAR	38 17 1976	AVG. LOW LOWEST YEAR	37 24 1976	AVG. LOW LOWEST YEAR	37 28 1976	AVG. LOW LOWEST YEAR	36 24 1952	AVG. LOW LOWEST YEAR	36 19 1950	AVG. LOW LOWEST YEAR	36 24 1953
AVG. HIGH HIGHEST YEAR	57 70 1970	AVG. HIGH HIGHEST YEAR	57 73 1950	AVG. HIGH HIGHEST YEAR	56 72 1950	AVG. HIGH HIGHEST YEAR	56 70 1973	AVG. HIGH HIGHEST YEAR	55 71 1973	AVG. HIGH HIGHEST YEAR	55 70 1950
AVG. LOW LOWEST YEAR	36 25 1968	AVG. LOW LOWEST YEAR	36 21 1953	AVG. LOW LOWEST YEAR	35 20 1951	AVG. LOW LOWEST YEAR	35 22 1953	AVG. LOW LOWEST YEAR	34 24 1966	AVG. LOW LOWEST YEAR	34 21 1964
AVG. HIGH HIGHEST YEAR	55 67 1950	AVG. HIGH HIGHEST YEAR	55 66 1969	AVG. HIGH HIGHEST YEAR	55 67 1970	AVG. HIGH HIGHEST YEAR	55 64 1969	AVG. HIGH HIGHEST YEAR	55 69 1969	AVG. HIGH HIGHEST YEAR	55 67 1969
AVG. LOW LOWEST YEAR	34 22 1967	AVG. LOW LOWEST YEAR	33 26 1963	AVG. LOW LOWEST YEAR	33 22 1971	AVG. LOW LOWEST YEAR	33 26 1968	AVG. LOW LOWEST YEAR	33 17 1973	AVG. LOW LOWEST YEAR	33 21 1973
AVG. HIGH HIGHEST YEAR	55 69 1969	AVG. HIGH HIGHEST YEAR	54 71 1955	AVG. HIGH HIGHEST YEAR	54 71 1955	AVG. HIGH HIGHEST YEAR	54 70 1971	AVG. HIGH HIGHEST YEAR	54 69 1955	AVG. HIGH HIGHEST YEAR	54 70 1955
AVG. LOW LOWEST YEAR	33 22 1967	AVG. LOW LOWEST YEAR	33 17 1953	AVG. LOW LOWEST YEAR	33 8 1953	AVG. LOW LOWEST YEAR	33 21 1953	AVG. LOW LOWEST YEAR	33 24 1953	AVG. LOW LOWEST YEAR	33 22 1966
AVG. HIGH HIGHEST YEAR	54 69 1955	AVG. HIGH HIGHEST YEAR	54 73 1951	AVG. HIGH HIGHEST YEAR	54 66 1964	AVG. HIGH HIGHEST YEAR	56.5 34.6 77	AVG. WIND SPEED PREVAILING WIND DIR. WEST	5.4 5.4 IN.	AVG. WIND SPEED PREVAILING WIND DIR. WEST	5.4 5.4 IN.
AVG. LOW LOWEST YEAR	33 18 1966	AVG. LOW LOWEST YEAR	33 21 1958	AVG. LOW LOWEST YEAR	33 21 1958	AVG. LOW LOWEST YEAR	47 2.43 1.02	AVERAGE CLOUDINESS GREATEST MONTHLY RAINFALL GREATEST 24-HOUR RAINFALL	37 2.43 1.02	AVERAGE CLOUDINESS GREATEST MONTHLY RAINFALL GREATEST 24-HOUR RAINFALL	37 2.43 1.02

CUMULATIVE PRECIP THROUGH DECEMBER 10.77 IN (YEARLY AMOUNT)  
ANNUAL AVERAGE SNOWFALL 6.8 IN



1961-63

1950-1976

1948-1976

M O N T H	STATION PRESSURE (INCHES OF MERCURY)		SIX-HOURLY RELATIVE HUMIDITY						AVERAGE NUMBER OF DAYS WITH:				AVG. DE- GREE BASE 65°F Ø	GREATEST SNOWFALL		AVG. DAILY SOLAR RADI- ATION ØØ									
	MEANS	HIGH- EST	LOWEST	5		11		E A N S	THUNDER- STORMS	PRECIPITATION		VISI- BILITY		SINGLE STORM	MONTHLY										
				AM	PM	AM	PM			Ø	Ø														
JAN	25.770	26.240	25.160	54	42	38	47	45	=	5	3	1	2	1	600	332									
FEB	25.733	26.185	25.180	49	36	29	40	39	=	5	3	2	2	2	454	410									
MAR	25.671	26.180	25.180	41	28	22	33	31	1	6	4	2	1	4	321	508									
APR	25.666	26.160	25.190	35	23	17	27	26	1	4	2	1	=	4	94	624									
MAY	25.674	26.120	25.290	34	21	16	25	24	4	5	2	1	=	2	16	679									
JUN	25.670	26.070	25.310	38	23	18	28	27	6	7	3	2	=	3	0	692									
JUL	25.755	26.050	25.470	58	36	31	46	43	13	15	8	4	1	3	0	632									
AUG	25.793	26.010	25.510	59	37	31	45	43	11	7	14	8	4	1	0	584									
SEP	25.785	26.050	25.410	56	36	30	45	42	5	6	8	5	3	1	4	538									
OCT	25.799	26.220	25.300	51	33	29	42	39	2	2	5	3	3	1	75	485									
NOV	25.800	26.240	25.290	51	34	34	44	41	=	1	4	2	1	1	363	340									
DEC	25.799	26.285	25.200	56	42	38	49	46	=	6	4	2	3	*	601	331									
YEAR	25.743	26.285	25.160	49	33	28	39	37	43	32	84	47	26	14	23	2528	513								

\* LESS THAN  $\frac{1}{2}$ . = LESS THAN  $\frac{1}{2}$ , BUT MAKING A TOTAL OF 1.  $\angle$  DISTANT LIGHTNING--NO THUNDER HEARD.  
+ VISIBILITY REDUCED TO 6 MILES OR LESS DUE TO PRECIPITATION AND FOG. Ø HEATING DEGREE DAYS.  
++ VISIBILITY REDUCED TO 6 MILES OR LESS DUE TO HAZE, DUST AND BLOWING DUST. T TRACE OF PRECIPITATION.  
ØØ MEASUREMENTS IN LANGLEYS, MADE ON ROOF OF BUILDING 1744, WSMR HEADQUARTERS, BY CALIBRATION LABORATORY.

\* LESS THAN  $\frac{1}{2}$ . = LESS THAN  $\frac{1}{2}$ , BUT MAKING A TOTAL OF 1.  $\angle$  DISTANT LIGHTNING--NO THUNDER HEARD.  
 + VISIBILITY REDUCED TO 6 MILES OR LESS DUE TO PRECIPITATION AND FOG. Ø HEATING DEGREE DAYS.  
 ++ VISIBILITY REDUCED TO 6 MILES OR LESS DUE TO HAZE, DUST AND BLOWING DUST. T TRACE OF PRECIPITATION.  
 ØØ MEASUREMENTS IN LANGLEYS, MADE ON ROOF OF BUILDING 1744, WSMR HEADQUARTERS, BY CALIBRATION LABORATORY.

TABLE IV. MONTHLY AND ANNUAL CLIMATOLOGICAL DATA, "A" STATION, WSMR HEADQUARTERS

BEST AVAILABLE COPY

ITEM	WINTER	SPRING	SUMMER	FALL	YEAR
TEMPERATURES (°F)					
Mean Maximum	57.4	75.2	92.4	75.5	75.1
Mean Minimum	35.6	52.1	69.4	52.6	52.4
Mean	46.4	63.7	80.9	64.1	63.8
Extremes of Record					
Highest	81	103	107	98	107
Date	2/11/57	5/28/51	7/31/72	9/16/51	
Lowest	-6	16	50	22	-6
Date	1/11/62	3/4/65	6/11/65	11/11/50	1/11/62
DEGREE DAYS (Base 65°F)	1655	431	0	442	2528
RELATIVE HUMIDITY (%)	43	27	38	401	37
SURFACE WINDS (Knots)					
Average Speed	W 5.9	W 8.2	W 5.5	W 5.0	W 6.1
Strongest Gusts	SW 102	W, WSW 74	S 60	W 61	SW 82
Month and Year	2/77	3/51, 5/61	6/62	11/65	12/51
RAINFALL (Inches) Ø	1.82	.96	5.01	3.00	10.79
Percent of Annual	19%	9%	46%	26%	100%
Greatest Monthly	2.43	3.00	7.42	5.76	7.42
Month and Year	12/65	3/58	6/66	9/58	6/66
Greatest 24-Hour	1.02	1.46	4.25	2.96	4.25
Dates	12/14-15/67	3/5-6/58	8/23-24/59	9/11-12/64	1959
SNOWFALL (Inches)	5.3	.4	0.0	0.8	6.5
Greatest Monthly	14.9	3.5	0.0	10.6	14.9
Month and Year	12/67	3/58	- - -	11/76	1967
CLOUDINESS (%)	38	34	41	29	36
NUMBER OF DAYS WITH:					
Measurable Rainfall	10	9	19	10	48
Thunderstorms	1	5	30	8	44
Visibility ≤ 6 Miles	10	11	9	6	36
Ø 0.01" or more					
STATION PRESSURE					
Average (Inches of Hg)	25.756	25.670	25.731	25.763	25.730
<p>WINTER = Months of December, January, February.            SPRING = March, April, May. SUMMER = June, July, August.            FALL = September, October, November.            ** With Prevailing Wind Directions. To convert knots to miles per hour,            multiply knots by 1.15155.            Ø "Rainfall" includes water content of snowfall.</p>					

TABLE V. "A" STATION CLIMATOGRAPHY--SEASONAL VALUES, 1950-1977

TABLE VI.

MONTHLY AND ANNUAL TEMPERATURE MEANS AND EXTREMES (°FAHRENHEIT) AT SEVEN WSMR SITES

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
STALLION SITE													
Elevation 4,940 FT MSL      Period of Record 1962-1973													
Mean Max	51	56	63	72	82	90	92	89	82	74	61	51	72
Mean Min	21	26	31	39	48	57	64	61	50	43	32	23	41
Abs Max	72	77	85	93	97	101	104	101	95	90	79	71	104
Abs Min	-12	2	6	17	30	40	54	47	35	20	14	2	-12
WSD* SITE													
Elevation 3,989 FT MSL      Period of Record 1960-1973													
Mean Max	57	61	69	78	87	94	95	92	87	78	66	57	77
Mean Min	25	29	36	46	53	62	67	64	58	45	33	27	45
Abs Max	78	81	89	97	100	108	108	104	99	94	83	75	108
Abs Min	-14	5	6	19	26	41	57	51	37	22	12	5	-14
JALLEN SITE													
Elevation 4,051 FT MSL      Period of Record 1963-1973													
Mean Max	55	59	67	76	86	92	95	91	85	77	64	56	75
Mean Min	25	29	35	44	52	61	67	65	57	46	34	27	45
Abs Max	76	81	89	98	98	108	106	106	98	92	84	76	108
Abs Min	-2	5	7	22	30	43	58	50	37	28	16	7	-2
APACHE SITE													
Elevation 3,956 FT MSL      Period of Record 1963-1973													
Mean Max	51	60	68	77	86	92	95	92	86	79	65	56	76
Mean Min	24	27	35	44	52	61	66	63	57	44	33	26	44
Abs Max	78	80	89	97	100	108	107	103	99	93	82	75	108
Abs Min	-2	7	7	20	28	42	59	53	37	21	13	2	-2
"A" SITE													
Elevation 4,238 FT MSL      Period of Record 1950-1973													
Mean Max	56	60	66	75	84	93	93	91	86	76	64	56	75
Mean Min	34	38	43	52	60	69	70	69	63	53	41	35	52
Abs Max	76	81	86	94	103	106	107	103	98	92	84	77	107
Abs Min	-6	8	16	29	38	50	59	55	46	33	22	8	-6
HMN* SITE [14]													
Elevation 4,090 FT MSL      Period of Record 1942-1973													
Mean Max	55	60	66	76	85	94	94	93	87	77	64	56	75
Mean Min	27	31	37	45	54	63	68	66	59	48	34	28	47
Abs Max	79	80	87	96	103	107	107	106	103	93	81	75	107
Abs Min	-11	0	9	22	27	42	54	53	38	24	12	2	-11
SMR* SITE													
Elevation 3,999 FT MSL      Period of Record 1963-1973													
Mean Max	56	60	68	77	86	93	95	91	86	77	65	56	76
Mean Min	27	31	39	48	56	64	68	65	60	47	37	29	48
Abs Max	78	83	87	96	100	106	108	103	98	93	82	74	108
Abs Min	4	7	9	22	32	42	59	57	42	23	16	6	4

\*White Sands Desert

\*Small Missile Range

\*Holloman



TABLE VII.

## MONTHLY AND ANNUAL MEAN PRECIPITATION (INCHES) AT SEVEN WSMR SITES

Site	Stallion	White Sands Desert	Jallen	"A"	Holloman* [14]	Small Missile Range	Apache
Elevation	4,940	3,989	4,051	4,238	4,070	3,999	3,956
Period of Record	1963-73	1963-73	1966-73	1950-73	1942-73	1964-73	1964-73
Jan	0.12	0.29	0.26	0.48	0.41	0.29	0.29
Feb	0.19	0.40	0.34	0.57	0.40	0.39	0.18
Mar	0.29	0.25	0.14	0.52	0.53	0.26	0.17
Apr	0.10	0.14	0.07	0.22	0.12	0.13	0.12
May	0.30	0.15	0.37	0.23	0.30	0.16	0.15
Jun	0.97	1.39	0.77	0.89	0.98	1.04	0.96
Jul	1.71	1.94	1.82	2.29	1.86	1.89	1.35
Aug	2.13	2.06	1.50	1.86	1.95	2.48	2.13
Sep	1.27	1.39	1.07	1.29	1.32	1.15	1.21
Oct	0.96	0.75	0.98	1.06	1.04	0.77	0.63
Nov	0.25	0.37	0.44	0.42	0.34	0.35	0.35
Dec	0.52	0.47	0.55	0.76	0.62	0.64	0.58
Annual	8.80	10.20	8.27	10.59	8.76	9.55	7.87

\*Precipitation records from Holloman Air Force Base were used for the period 1942-64; records from Holloman Rawinsonde Site were used for the years 1965-73.

YEAR	ANNUAL MEAN TEMP F°	MEAN MAX TEMP F°	HIGHEST MAX TEMP F°	MEAN MIN TEMP F°	LOWEST MIN TEMP F°	GROWING SEASON IN DAYS	AVERAGE STATION PRESSURE IN INCHES	HIGHEST PRESSURE IN INCHES	LOWEST PRESSURE IN INCHES
1950	65.8	78.0	103	53.6	19	268			
1951	64.8	76.5	106	53.0	8	234			
1952	63.7	74.6	100	52.7	23	241			
1953	64.3	75.4	102	53.2	8	260			
1954	65.5	76.5	102	54.4	19	273			
1955	63.1	73.9	101	52.3	21	226			
1956	64.4	75.8	101	53.0	13	248			
1957	64.5	74.4	104	54.5	25	241			
1958	63.4	73.8	104	53.0	21	250			
1959	63.9	75.0	99	52.8	25	239			
1960	63.3	74.2	106	52.3	14	247			
1961	63.6	74.9	102	52.3	26	240	25.708	26.160	25.290
1962	64.0	75.5	100	52.2	-6	270	25.738	26.240	25.285
1963	64.2	76.1	105	52.3	8	266	25.739	26.225	25.330
1964	62.6	74.2	103	50.9	13	256	25.711	26.165	25.190
1965	63.7	75.4	100	51.9	16	254	25.724	26.130	25.210
1966	62.7	74.6	102	50.8	13	267	25.736	26.090	25.290
1967	63.3	75.1	100	51.6	14	241	25.746	26.285	25.240
1968	62.4	74.0	105	50.8	18	249	25.743	26.220	25.250
1969	64.1	75.8	103	52.4	22	241	25.704	26.280	25.235
1970	63.2	74.9	103	51.3	16	232	25.736	26.190	25.315
1971	65.5	74.9	100	52.1	9	259	25.707	26.190	25.160
1972	64.4	75.5	107	52.0	15	236	25.7194	26.240	25.295
1973	62.3	74.5	100	49.8	17	232	25.7322	26.190	25.305
1974	63.4	75.2	103	51.8	15	272	25.7597	26.185	25.330
1975	61.9	74.6	100	50.0	20	228	25.7568	26.240	25.021
1976	61.6	74.0	101	50.0	5	252	25.7618	26.155	25.420

TABLE VIII. YEARLY VALUES "A" STATION

NUMBER OF DEGREE DAYS BASE 65°F	NUMBER OF PRECIP DAYS TRACE OR MORE	ANNUAL RAINFALL INCHES	ANNUAL SNOWFALL INCHES	MAXIMUM WIND GUSTS IN KNOTS	AVERAGE YEARLY WIND SPEED KNOTS	AVERAGE 24-HOUR CLOUD COVER TENTHS	NUMBER OF DAYS WITH THUNDERSTORMS	NUMBER OF DAYS VISBY LESS THAN 6 MILES
1861	80	6.41	+	35	6.4		25	40
2584	88	7.08	8.8	82	7.6		31	44
2643	100	9.32	9.3	56	6.5		49	45
2457	63	5.30	1.8	68	5.8		15	27
2182	79	5.91	0.5	65	6.0		43	69
2561	71	9.27	0.9	66	5.9		31	62
2619	36	3.92	1.2	64	6.4		19	30
2320	70	10.37	1.8	66	5.9		24	30
2785	101	20.02	9.3	66	5.2		37	45
2492	68	11.45	3.7	70	5.2		38	29
2784	67	11.25	18.5	68	6.2	4	31	33
2573	91	12.62	6.2	74	6.4	4	37	46
2440	103	14.07	4.9	62	5.4	4	44	27
2489	99	7.65	6.0	61	5.5	4	49	29
2972	70	9.22	5.2	67	6.4	3	38	30
2375	103	12.40	0.5	63	6.0	4	52	25
2704	102	16.63	2.9	61	5.4	4	59	30
2429	106	10.12	15.4	73	7.2	4	57	37
2718	105	12.99	16.4	67	6.3	4	41	45
2522	90	13.53	6.3	63	6.2	4	46	23
2613	58	8.41	2.4	61	6.5	4	37	16
2503	85	8.75	7.6	71	6.7	4	39	27
2369	108	16.19	11.6	79	6.1	4	65	30
2812	88	11.38	11.6	78	6.4	3	38	20
2499	106	15.76	9.0	71	6.2	4	57	12
2785	90	9.12	5.9	50	6.6	3	38	11
2858	102	11.44	15.9	65	6.0	4	48	27

TABLE VIII. YEARLY VALUES "A" STATION (CONT)